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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,132	07/30/2001	William Joseph Piazza	RPS920000117US1	1394

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EXAMINER

NAHAR, QAMRUN

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,132

Applicant(s)

PIAZZA, WILLIAM JOSEPH

Examiner

Qamrun Nahar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 11/24/04.
2. The objection to the drawings is withdrawn in view of applicant's submission of replacement drawing sheet.
3. The objection to the disclosure is withdrawn in view of applicant's amendment.
4. The objection to claims 16 and 31 is withdrawn in view of applicant's amendment.
5. The rejection under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention to claims 1-11 and 20-27 is withdrawn in view of applicant's amendment.
6. Claims 1, 12, 16, 19, 20 and 31 have been amended.
7. Claims 1-52 are pending.
8. Claims 12-18 stand finally rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
9. Claims 12-18 stand finally rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
10. Claims 1-14, 17-29 and 32-52 stand finally rejected under 35 U.S.C. 102(b) as being anticipated by Kathail (U.S. 5,802,365).
11. Claims 15-16 and 30-31 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Kathail (U.S. 5,802,365) in view of Applicant Admitted Prior Art (hereinafter "AAPA").

Response to Amendment

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 12-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "said compatibility table" in lines 6-7 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "a compatibility table".

Claims 13-18 are rejected for dependency upon rejected base claim 12 above.

Claim Rejections - 35 USC § 101

14. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claims 12-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 12, merely claimed as a "data structure", constitute non-functional descriptive material *per se*. The claims do not define any structural and functional relationship between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. The claimed data structure is not capable of causing

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functional change in a computer. *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760. Note that while Applicant's claims recite a "data structure", the recited limitations do not impart functionality when employed as a computer component and do not specify a physical or logical relationship among data elements, designed to support specific data manipulation functions. Accordingly, the claimed matter cannot be considered functional descriptive material. When nonfunctional descriptive material is recorded on some computer-readable medium, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. *That is, a computer system or program instruction is required to execute a program that uses the data structure.* Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make it statutory. Such a result would exalt form over substance. *In re Sarkar*, 588 F.2d 1330, 1333, 200 USPQ 132, 137 (CCPA 1978).

As per claims 13-18, these claims are rejected for dependency on the above rejected non-statutory claim 12 above.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 1-14, 17-29 and 32-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Kathail (U.S. 5,802,365).

Per Claim 1 (Amended):

The Kathail patent discloses:

- **a method for identifying compatibility between two firmware images** (“A method and mechanism are described for automatically correlating a device to its appropriate driver within a computer system utilizing candidate matching.” in column 2, lines 37-39)

- **analyzing a control block of each of said firmware images, wherein each of said control blocks includes a firmware family code and a compatibility table of a firmware image associated with said control block** (“Drivers for devices can be located in RAM, ROM, or in another storage media (such as disk drive). Drivers can include a data field indicating a driver name indicative of a corresponding device with which they operate and a data field indicating a service category of the family with which they belong.” in column 2, lines 44-50)

- **determining if said firmware family codes of said firmware images are the same; and evaluating said compatibility tables to determine if said firmware images are compatible in response to said determination that said firmware family codes of said firmware images are not the same, wherein each of said compatibility tables describes a relationship between an associated firmware image and other family codes** (“In one embodiment, for a particular device, the system constructs a candidate list of drivers by comparing the device name and the compatible names from the device tree against all the driver names of data fields of all known drivers. In addition, the corresponding family code, which provides an interface to the driver

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code, is determined for each driver candidate by comparing the service category contained in the category information of the driver to a set of family names indicative of available families. The candidate list is sorted so that matches by device name and proper version number are higher priority.” in column 2, lines 50-60 and column 42, lines 53-64).

Per Claim 2:

The Kathail patent discloses:

- further comprising reporting said firmware images are not compatible if said family codes of said firmware images are not the same and said evaluation of said compatibility tables concludes that said firmware images are not compatible (column 2, lines 60-65).

Per Claim 3:

The Kathail patent discloses:

- wherein said compatibility table includes at least one table entry, wherein said table entry is associated with a different firmware image (column 7, lines 22-34).

Per Claim 4:

The Kathail patent discloses:

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- wherein said table entry includes a family code and a stepping level of said different firmware image (column 18, lines 27-34).

Per Claim 5:

The Kathail patent discloses:

- wherein said table entry further includes a relationship code that identifies whether a firmware image associated with said compatibility table can be utilized to replace a firmware belonging to a firmware family identified in said compatibility table (column 2, lines 50-60).

Per Claim 6:

The Kathail patent discloses:

- wherein said relationship code includes a family relationship code and a stepping level relationship code (column 18, lines 27-34).

Per Claim 7:

The Kathail patent discloses:

- wherein said family relationship code identifies which firmware family code is compatible with said firmware image associated with said compatibility table (column 18, lines 27-34).

Per Claim 8:

The Kathail patent discloses:

- wherein said stepping level relationship code identifies which stepping levels can replace or be replaced with said firmware image associated with said compatibility table (column 18, lines 27-34).

Per Claim 9:

The Kathail patent discloses:

- wherein each of said control block further includes a stepping level of an associated firmware image (column 18, lines 27-34).

Per Claim 10:

The Kathail patent discloses:

- wherein each of said control blocks is resident in an associated firmware image (column 7, lines 66-67 to column 8, lines 1-10).

Per Claim 11:

The Kathail patent discloses:

- wherein each of said control blocks is not resident in an associated firmware image and accessed utilizing a software application interface (API) (column 18, lines 21-26).

Per Claim 12 (Amended, as best understood):

The Kathail patent discloses:

- a computer-readable medium having stored thereon a data structure for a firmware family control block of a firmware image, said data structure comprising: a first field containing data representing a firmware family code of said firmware image; and a second field containing data representing a compatibility table entry (column 2, lines 37-60 and column 18, lines 16-34)
- wherein a compatibility table includes a stepping level relationship code that identifies which stepping levels can replace or be replaced by said firmware image (column 18, lines 27-34).

Per Claim 13 (as best understood):

The Kathail patent discloses:

- wherein said data structure further includes a third field containing data representing a firmware stepping level of said firmware image (column 18, lines 29-34).

Per Claim 14 (as best understood):

The Kathail patent discloses:

- wherein said computer-readable medium is a non-volatile memory device (column 2, lines 44-50).

Per Claims 17-18 (as best understood):

These are computer-readable medium versions of the claimed method discussed above (claims 5 and 7, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Kathail.

Per Claim 19 (Amended):

The Kathail patent discloses:

- wherein said two firmware images include an original firmware image and a replacement firmware image, and wherein said firmware images are directly deemed compatible if said replacement firmware image can replace said original firmware image without causing an error when said replacement firmware is executed (column 42, lines 53-64).

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Per Claims 20 (Amended) & 21-27:

These are computer-readable medium versions of the claimed method discussed above (claims 1-5 and 7-9, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Kathail.

Per Claims 28-29 & 32-34:

These are data processing system versions of the claimed computer-readable medium discussed above (claims 12-13 and 17-19, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Kathail.

Per Claim 35:

The Kathail patent discloses:

- **a method for upgrading an installed firmware with a candidate firmware** (“A method and mechanism are described for automatically correlating a device to its appropriate driver within a computer system utilizing candidate matching.” in column 2, lines 37-39)
- **determining if each of said installed and candidate firmwares has a control block, wherein each of said control blocks includes a firmware family code, firmware stepping level and compatibility table of an associated firmware** (“Drivers for devices can be located in RAM,

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ROM, or in another storage media (such as disk drive). Drivers can include a data field indicating a driver name indicative of a corresponding device with which they operate and a data field indicating a service category of the family with which they belong.” in column 2, lines 44-50)

- acquiring firmware family codes and firmware stepping levels of said installed and candidate firmwares in response to said determination that both of said installed and candidate firmwares have a control block; comparing said family codes and said stepping levels of said installed and candidate firmwares; and determining if said installed and candidate firmwares are compatible utilizing said compatibility tables in response to said family codes and said stepping levels of said installed and candidate firmwares not matching (“In one embodiment, for a particular device, the system constructs a candidate list of drivers by comparing the device name and the compatible names from the device tree against all the driver names of data fields of all known drivers. In addition, the corresponding family code, which provides an interface to the driver code, is determined for each driver candidate by comparing the service category contained in the category information of the driver to a set of family names indicative of available families. The candidate list is sorted so that matches by device name and proper version number are higher priority.” in column 2, lines 50-60 and column 42, lines 53-64).

Per Claim 36:

The Kathail patent discloses:

- further comprising utilizing legacy methods for determining if said installed and candidate firmwares are compatible in response to said determination that said installed firmware does not have a control block (column 21, lines 15-20).

Per Claim 37:

The Kathail patent discloses:

- further comprising overwriting said installed firmware with said candidate firmware in response to said determination that said installed and candidate firmwares are compatible (column 2, lines 60-65).

Per Claim 38:

The Kathail patent discloses:

- further comprising reporting said installed firmware with said candidate firmware are incompatible in response to said determination that said installed and candidate firmwares are not compatible (column 24, lines 39-42).

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Per Claims 39-43:

These are another versions of the claimed method discussed above (claims 3-5 and 7-8, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Kathail.

Per Claims 44-52:

These are computer-readable medium versions of the claimed method discussed above (claims 35-43, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Kathail.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 15-16 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kathail (U.S. 5,802,365) in view of Applicant Admitted Prior Art (hereinafter "AAPA").

Per Claim 15 (as best understood):

The rejection of claim 14 is incorporated, and further, Kathail does not explicitly teach wherein said non-volatile memory device is a programmable read only memory (PROM).

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AAPA teaches wherein said non-volatile memory device is a programmable read only memory (PROM) (see instant specification, pg. 2, lines 8-13).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the computer-readable medium disclosed by Kathail to include wherein said non-volatile memory device is a programmable read only memory (PROM) using the teaching of AAPA. The modification would be obvious because one of ordinary skill in the art would be motivated to distribute updates using PROM.

Per Claim 16 (Amended, as best understood):

The rejection of claim 14 is incorporated, and further, Kathail does not explicitly teach wherein said non-volatile memory device is an electrically erasable programmable read only memory (EEPROM). AAPA teaches wherein said non-volatile memory device is an electrically erasable programmable read only memory (EEPROM) (see instant specification, pg. 2, lines 13-17).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the computer-readable medium disclosed by Kathail to include wherein said non-volatile memory device is an electrically erasable programmable read only memory (EEPROM) using the teaching of AAPA. The modification would be obvious because one of ordinary skill in the art would be motivated to reuse the same hardware for updates.

Per Claims 30 & 31 (Amended):

These are data processing system versions of the claimed computer-readable medium discussed above (claims 15-16, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Response to Arguments

20. Applicant's arguments filed on 11/24/04 have been fully considered but they are not persuasive.

In the remarks, the applicant argues that:

a) In paragraph 10 of the present office action, the Examiner has rejected Claims 1-14, 17-29 and 32-52 under 35 U.S.C. j 10208 as being anticipated by Kathail (U.S. Patent No. 5,802,365 – “Kathail”). In paragraph 12 of the present office action, the Examiner has rejected Claims 15-16 and 30-31 under 35 U.S.C. j 103(a) as being unpatentable over Kathail in view of Applicant's Admitted Prior Art (AAPA). Applicants respectfully traverse these rejections, and request that they be withdrawn and all claims allowed.

Kathail describes a method for automatically correlating a device to its appropriate driver. If the device does not already have a driver, then a candidate list of drivers is provided. Each driver from the list is sequentially tried until a driver is found that does not cause an error. (Kathail abstract.) A device in a device tree is automatically matched up with its appropriate driver according to the device's name (Kathail, col. 7, lines 57-59). If the new device does not have a name, then a pseudo-name is made up for it (Kathail, col. 8, lines 19-22). A driver

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description for the driver then helps a device manager pick the best driver among multiple candidates (Kathail, col. 8, lines 64-66). Thus, replacing a driver is a simple two-step process of 1) the driver to be replaced giving up control of the device and 2) installing the new driver (Kathail, col. 17, lines 57-62). If two drivers are available, then the most recent version is chosen (Kathail, col. 36, lines 12-13). Thus, the device asks 1) is there a driver available and 2) where is the most current version of the driver (Kathail, col. 42, lines 45-47)?

With reference to exemplary Claim 1, Kathail does not teach or suggest "determining if said [two] firmware images are compatible." Kathail never addresses the issue or whether two firmware images are compatible, but rather is focused only on whether a driver (firmware) is compatible with a hardware device.

Furthermore, Kathail assumes that all firmware updates (replacements) are compatible. For example, when replacing an original driver with an update replacement (as articulated in exemplary Claim 19 of the present invention), Kathail assumes that the update will work properly, as there is no suggestion by Kathail to make a determination as to whether the update will work (is compatible).

As the cited prior art does not teach or suggest all of the claims features in the presently presented claims, Applicants respectfully request that all pending claims be allowed.

Examiner's response:

a) Examiner strongly disagrees with applicant's assertion that Kathail fails to disclose the claimed limitations recited in claims 1 and 19. Kathail clearly shows each and every limitation in claims 1 and 19. Kathail teaches determining if said firmware images are compatible; further

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teaches wherein said two firmware images include an original firmware image and a replacement firmware image, and wherein said firmware images are directly deemed compatible if said replacement firmware image can replace said original firmware image without causing an error when said replacement firmware is executed (column 42, lines 53-64). In addition, see the rejection above in paragraph 17 for rejection to claims 1 and 19.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

22. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be reached on Mondays through Thursdays from 8:30 AM to 6:00 PM. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (571) 272-3719. The fax phone number for the organization where this application or processing is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QN
February 18, 2005

Kakali Chaki
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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100